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A NEW CRAYFISH OF THE GENUS *ORCONECTES*  
FROM SOUTHERN TENNESSEE

(Decapoda, Astacidae)  
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The new crayfish herein described belongs to the *Limosus* Section of the genus *Orconectes*, and the locality from which it was collected is the most southern record for the epigean members belonging to this section. The previous most southern record for the pigmented species belonging to this assemblage is that of *Orconectes shoupi* Hobbs (1948: 14) which was collected in a tributary of the Cumberland River near Nashville, Davidson County, Tennessee. Among the members of the *Limosus* Section only the cavernicolous *Orconectes pellucidus australis* (Rhoades 1941:142) has been collected farther south—in several caves in northern Alabama—and no species belonging to this section has been taken farther southwest.

Hobbs (1948:20) has constructed a key for the identification of the 13 previously known species and subspecies of this section, and the gonopods of twelve of them are figured in the same paper. A revised key to the nine epigean species is included below.

Genus *Orconectes* Cope 1872  
*Orconectes wrighti*, sp. nov.<sup>2</sup>

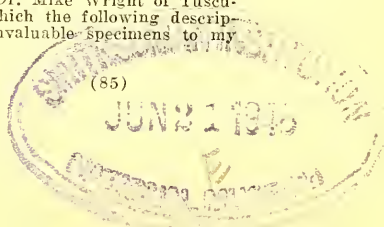
*Diagnosis.*—Rostrum with small, corneous, lateral spines or tubercles; margins not distinctly thickened and converging; upper surface without median carina, concave and heavily pubescent. Fingers of chela with well defined longitudinal ridges. Epistome with a slight longitudinal median ridge. Areola about six times longer than broad, with four or five punctations in narrowest part—length about 32% of entire length of carapace. Male with hooks on ischiopodites of third pereiopods only. Terminal elements of first pleopod of first form male short, reaching almost to coxopodite of second pereiopod. Two terminal elements separated for only a short distance near tip, slightly divergent, and subequal in length. Annulus ventralis immovable (see fig. 1 for surface contour).

*Holotypic Male, Form I.*—Body subovate, not conspicuously depressed. Abdomen narrower than thorax. Width of carapace greater than depth in region of caudodorsal margin of cervical groove (12.2-10.9 mm.).

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<sup>2</sup>This species is named in honor of my good friend, Dr. Mike Wright of Tusculum College. Dr. Wright collected the specimens on which the following descriptions are based, and he has added numerous other invaluable specimens to my collection.

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Areola moderately broad (5.9 times longer than broad) with four or five punctations in narrowest part—punctations crowded and strongly setiferous, particularly in cephalolateral portions; cephalic section of carapace about 2.1 times as long as areola (length of areola about 32.0% of entire length of carapace).

Rostrum with margins only slightly thickened and converging. Upper surface shallowly concave and bearing no median carina. Base of acumen set off by small corneous spines directed cephalodorsad. Acumen of moderate length and ending in a corneous spine which is directed cephalad and does not quite reach distal end of last segment of peduncle of antennule. Subrostral ridges moderately prominent but not visible in dorsal aspect. Entire surface of rostrum heavily pubescent.

Postorbital ridges prominent, shallowly grooved and terminating cephalad in acute corneous spines. Suborbital angle absent. Branchiostegal spine small but well defined. Prominent lateral spine on right side of carapace—that on left broken. Dorsal surface of carapace thickly studded with setiferous punctations with no polished area in gastric region; lateral surface granulate and setiferous.

Cephalic section of telson with two spines in each caudolateral corner.

Epistome bearing a faint median longitudinal ridge and no cephalo-median projection. See fig. 8 for marginal contour.

Antennules of the usual form with a strong spine on ventral surface of basal segment.

Antennae extend caudad to third abdominal segment. Antennal scale of moderate width; mesial margin evenly rounded; outer portion not unusually broad nor swollen, and terminating distad in a well developed spine; lamellar portion of moderate breadth (see fig. 9).

Chela somewhat depressed; palm slightly inflated; much of the sculpture obscured by dense setae. Inner margin of palm with a row of nine small tubercles. Above this row is another of five or six; both rows partially hidden by the dense setae. Fingers not gaping. Upper surfaces of both fingers with two longitudinal ridges, the more median one on each finger more prominent than the one lying next to opposable margin. Lower surfaces of both fingers with a submedian longitudinal ridge. Opposable margin of dactyl with five corneous tubercles along proximal three-fifths—the proximal four knob-like and subequal in size, the distal one smaller, and while knob-like, more nearly acute; distal half with a broad band of minute denticles. Mesial margin of dactyl with a row of setiferous punctations—those along distal half bearing thick tufts of stiff hairs. Opposable margin of immovable finger with five rounded corneous tubercles on proximal third and a single somewhat more acute corneous one at base of distal third; distal two-thirds with a broad band of minute denticles. Armature of both fingers flanked above and below by dense plumose setae. Lateral surface of immovable finger with a row of punctations bearing short heavy hairs.

Carpus of first pereopod longer than broad with a very shallow longitudinal furrow on upper surface, setae present on all surfaces; punctate except on mesial portion of upper surface where there are scattered squamous tubercles. Mesial surface with a prominent median spine and a much smaller one lying immediately distad of it; another prominent spine just proximad of upper mesiodistal angle. Lower surface with two large spines on distal border.

Merus with two large spines near upper distal margin; a prominent spine on lower lateral extremity. Lower surface with the usual lateral row reduced to two tubercles of which the proximal one is very small and the distal one prominent; inner row consisting of eight tubercles, the distal one considerably larger than the others. Otherwise the entire podomere bears scattered setiferous punctations.

Hooks on ischiopodites of third pereopods only; hooks strong with proximal surfaces subplane and bearing setae.

Coxopodites of fourth and fifth pereopods without projections.

First pleopod almost reaching coxopodite of second pereopod when abdomen is flexed. Tip terminating in two distinct parts which are separated for only a short distance and subequal in length. Central projection corneous, cephalic surface almost straight except at extreme tip where it is recurved; caudal surface sloping cephalodistad except at extreme tip where it follows contour of cephalic surface. Mesial process non-corneous except at tip, and directed caudodistad and slightly laterad.

*Morphotypic Male, Form II.*—Differs from the holotype in only a few minor respects: Antennae extend caudad almost to telson; opposable margin of immovable finger with only four rounded corneous tubercles on proximal third; longitudinal ridges on fingers not nearly so well defined; spines on rostrum stronger, and acumen extends cephalad to distal end of peduncle of antennule; inner row of spines on lower surface of merus only five in number, while the two in outer row are about the same size. First pleopod with no corneous parts, nor are the two processes so acute distally; otherwise very similar (see figs. 3 and 5).

*Allotypic Female.*—Differs from the holotype in the following respects: Antennae extend caudad to fourth abdominal segment; rostrum slightly narrower at base than immediately distad of it; no longitudinal ridge on epistome; lower surface of merus with outer row of three large spines and inner row of seven, only the most distal of which is large; chela, except for proportion (see measurements) similar and with almost identical tubercle arrangement. Annulus ventralis subovate with the greatest length in the transverse axis, immovable. Sinus originates to the left of midventral line near midlength, runs caudodextrad and slightly crosses the midventral line where it turns very gently caudodextrad, and almost reaches the midcaudal margin of the annulus (see fig. 1).

*Measurements.*—Holotypic Male: carapace, height 10.9 width 12.2, length 26.0 mm.; areola, width 1.4, length 8.3 mm.; rostrum, width 4.3, length 7.0 mm.; abdomen, broken; right chela, length of inner margin of palm 7.2, width of palm 7.9, length of outer margin of hand 19.9, length of dactyl 11.1 mm. Allotypic Female: carapace, height 10.9, width 12.5, length 26.2 mm.; areola, width 1.4, length 8.1 mm.; rostrum, width 4.2, length 8.3 mm.; abdomen, length 27.6 mm.; right chela, length of inner margin of palm 5.3, width of palm 6.1, length of outer margin of hand 14.6, length of dactyl 7.8 mm.

*Type Locality.*—Robinson Creek, State Highway 57, Hardin County, Tennessee. "The bottom of the creek was of red clay and gravel with a few rocks forming riffles. The flow was relatively slow and large pools of relatively quiet waters were formed. The pools had large amounts of clay along the shore in the deeper areas, becoming quite

soft and mucky in such regions. The water was about one foot deep at the gravel bars, deepening to as much as 5 or 6 feet in a few of the pools. The stream was 10 to 15 feet wide, heavily shaded, and had some water-side vegetation. Exposed gravel bars were occasionally found along the bank, at which damselflies congregated in considerable numbers." (Wright 1946:279).

*Disposition of Types.*—The holotypic male, form I (U.S.N.M. no. 85144), the allotypic female and morphotypic male, form II (U.S.N.M. no. 85145), are deposited in the United States National Museum. Of the paratypes, a second form male and a female are deposited in the University of Michigan Museum of Zoology, and four males, form II, one female, and one immature female are in my personal collection at the University of Virginia.

*Specimens Examined.*—Tennessee, Hardin County: Robinson Creek, St. Hy. 57 (June 2, 1945, 1 ♂, form II), (September 8, 1945, 1 ♂, form I, 1 ♀ immature); Creek one mile south of Counce (September 8, 1945, 5 ♂ ♂, form II, 3 ♀ ♀). All specimens collected by Dr. Mike Wright.

*Relationships.*—*Orconectes wrighti* has its closest affinities with the members of the *Limosus* Section, and seems to have more in common with *Orconectes indianensis* (Hay 1896:494) than any other single species.

Key to the Epigeal Species of the *Limosus* Section  
(Based on the First Form Male)

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|--------|---|--|
| 1      | First pleopod with central projection and mesial process directed caudodistad .....                                   | 2  |
| 1'     | First pleopod with central projection and mesial process never both directed caudodistal .....                        | 4  |
| 2 (1)  | Central projection bent caudad at an angle greater than 45° .....   | <i>O. harrisoni</i> (Faxon 1884:130)       |
| 2'     | Central projection directed caudodistad at less than an angle of 45° .....  | 3  |
| 3 (2') | Central projection recurved throughout its length; no median carina on rostrum .....                                  | <i>O. kentuckiensis</i> Rhoades (1944:122) |
| 3'     | Central projection recurved but no throughout its entire length; median carina present on rostrum .....               | <i>O. sloani</i> (Bundy 1876:24)           |
| 4 (1') | Mesial process and central projection subparallel and directed distad .....   | 5  |
| 4'     | Mesial process directed caudodistad and central projection directed distad or cephalodistad .....                     | 6  |
| 5 (4)  | Terminal elements of first pleopod subequal in length or mesial process slightly longer than central projection ..... | <i>O. tricuspis</i> Rhoades (1944:117)     |
| 5'     | Mesial process never extending quite so far distad as central projection .....  | <i>O. rafinesquei</i> Rhoades (1944:116)   |
| 6 (4') | Lateral surface of carapace with more than one spine .....  | <i>O. limosus</i> (Rafinesque 1817:42)     |
| 6'     | Lateral surface of carapace with only one spine .....   | 7  |
| 7 (6') | Margins of rostrum decidedly thickened, and concave laterad .....   | <i>O. shoupi</i> Hobbs (1948:14)           |
| 7'     | Margins of rostrum not conspicuously thickened, and subparallel or convergent .....                                   | 8  |



- 8 (7') Upper surface of rostrum hirsute; fingers of chelae not gaping  
 -----*O. wrighti* Hobbs (*supra*)  
 8' Upper surface of rostrum with scattered setiferous punctations;  
 fingers of chelae slightly gaping-----*O. indianensis* (Hay 1896:  
 494)

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EXPLANATION OF PLATE

*Orconectes wrighti*, sp. nov.

Pubescence removed from all figures except 4 and 7.

- Fig. 1. Annulus ventralis.
- Fig. 2. Mesial view of first pleopod of first form male.
- Fig. 3. Mesial view of first pleopod of second form male.
- Fig. 4. Dorsal view of carapace.
- Fig. 5. Lateral view of first pleopod of second form male.
- Fig. 6. Lateral view of first pleopod of first form male.
- Fig. 7. Upper surface of chela of male.
- Fig. 8. Epistome.
- Fig. 9. Antennal scale.

